



# EZ Connect™

## Wireless Compact Flash Card

- Allows PDAs and Laptops to easily connect to an existing wireless network
- Ultra-Compact Type II Form Factor
- 802.11b High Speed Wireless LAN connection
- Supports both Ad-Hoc and Infrastructure Modes
- Plug and Play Configuration - Easy to Install and Simple to use

**SMC**®  
N e t w o r k s

**User Guide**  
*SMC2642W / SMC2645W*



# **EZ Connect™ Wireless CF Card User Guide**

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**The easy way to make all your network connections**

**SMC®**  
Networks

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**Part No. : 01-111340-006**

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You can download and upgrade to the latest version of software from SMC's web site, <http://www.smc.com>. For more technical information, please refer to the link listed below or contact SMC Technical Support Department at 1-800-SMC-4YOU.

[http://www.smc.com/index.cfm?action=tech\\_support\\_support\\_tools](http://www.smc.com/index.cfm?action=tech_support_support_tools)

## About This Manual

This manual includes procedures for the setup of SMC2642W Wireless Compact Flash Card under Windows CE 3.0 or later Pocket/Handheld PC and Windows 98/Me/NT/2000/XP for your Laptops. Please take a moment to read through this manual and familiarize yourself with wireless technology.

## Software Information

The software package works only on SMC2642W Wireless Compact Flash Card and contains the Windows 98/Me/NT/2000/XP/XP/CE driver and utility programs

For Windows 98/Me/NT/2000/XP

- Driver -- Version 1.07.29
- Utility -- Version 1.07.29

For Windows CE

- Driver -- Version 1.0.0
- Utility -- Version 1.0.0

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# Chapter 1 Introduction

The SMC2642W EZ Connect™ 11Mbps Wireless Compact Flash Card is a standard CF interface adapter integrated with wireless LAN technology. It provides you an easy and fast way to access your wireless and wired network. The Wireless LAN Compact Flash Card, which utilizes the latest advancement of PC industry – Compact Flash technology, allows you to install and use the card on Pocket/Handheld PC or Laptop easier than ever before. With the ability to provide an 11Mbps connection, the SMC Wireless CF Card gives you the equivalent of a 10Mbps Ethernet connection to access corporate network or the Internet in a wireless environment. SMC2642W 11Mbps Wireless Compact Flash Card is able to communicate with any 802.11 and 802.11b compliant products.

## ***1-1 Features and Benefits***

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1. Supports 1, 2, 5.5 and 11 Mbps data rate.
2. Working range up to 700ft. in an open environment.
3. Supports point-to-point and point-to-multipoint access.
4. Seamless connectivity to wired Ethernet and PC network LAN's augments existing networks quickly and easily.
5. Direct Sequence Spread Spectrum (DSSS) technology provides robust, interference-resistant and secure wireless connection.
6. Wireless connection without the cost of expensive cabling.
7. Supports Windows CE 3.0 or later Handheld/Pocket PC and Windows 98/Me/NT/2000/XP for your Laptop (with the use of SMCCF-CVT CF to PCMCIA Converter).
8. Support high security WEP encryption (64-bit and 128-bit WEP)
9. Supports Plug and Play.
10. Easy installation.

## **1-2 Applications**

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11Mbps Wireless LAN products offer a fast, reliable, cost-effective solution for wireless client access to the network in applications like the following:

**1. Remote access to corporate network information**

E-mail, file transfer and terminal emulation.

**2. Difficult-to-wire environments**

Historical or old buildings, asbestos installations, and open area where wiring is difficult to deploy.

**3. Frequently changing environments**

Retailers, manufacturers and those who frequently rearrange the workplace and change location.

**4. Temporary LANs for special projects or peak time**

Trade shows, exhibitions and construction sites where a temporary network is practical.

**5. Access to database for mobile workers**

Doctors, nurses, retailers, accessing their database while being mobile in the hospital, retail store or office campus.

**6. SOHO (Small Office and Home Office) users**

SOHO users need easy and quick installation of a small computer network.

**7. High security connection**

The secure wireless network can be installed quickly and provide flexibility. (Please refer to page 12 for encryption configuration.)

### **1-3 Product Kit**

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SMC2642W 11Mbps Wireless Compact Flash Card comes with the following items. Please go through each item below. If any listed item is not included or found damaged, please contact your local dealer.

#### **SMC2642W Wireless Compact Flash Card Includes:**

- 1 SMC2642W 11Mbps Wireless Compact Flash Card
- 1 Driver/Utility CD ROM
- This User Guide

#### **SMC2645W Wireless Compact Flash Card Kit Includes:**

- 1 SMC2642W 11Mbps Wireless Compact Flash Card
- 1 SMCCF-CVT CF to PCMCIA Converter
- 1 Driver/Utility CD ROM
- This User Guide

### **1-4 System Requirements**

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SMC2642W 11Mbps Wireless Compact Flash Card supports all Windows CE Handheld/Pocket PC devices with Compact Flash Type II host interface as well as all Windows-based devices with PCMCIA Type II host interface (with the use of SMCCF-CVT CF to PCMCIA Converter).

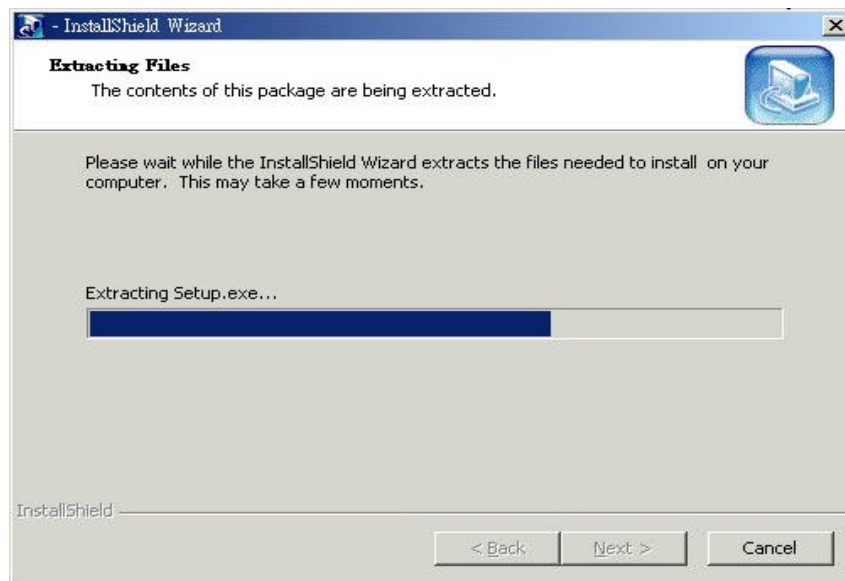


## Chapter 2 Installing SMC2642W Wireless Compact Flash Card

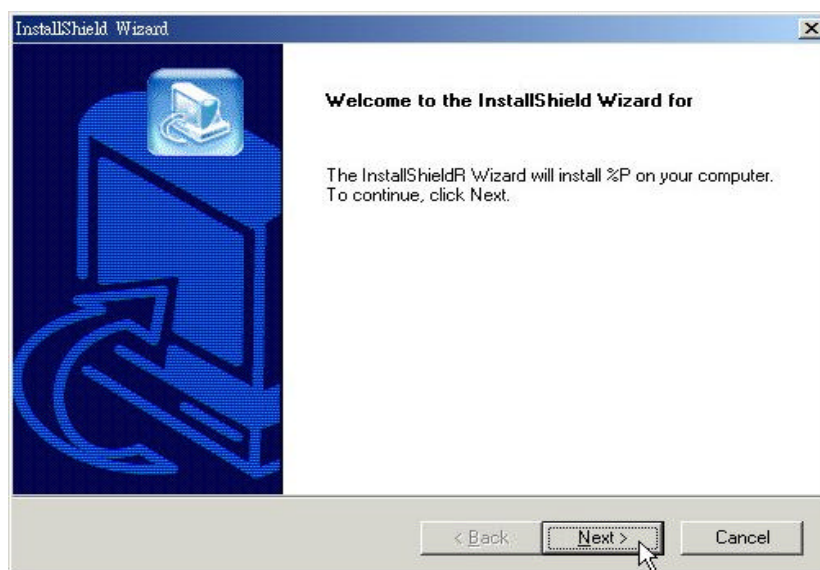
This chapter describes the installation of the SMC2642W 11Mbps Wireless Compact Flash Card driver for the CE 3.0 Handheld/Pocket PC.

### 2-1 Install the Setup Utility

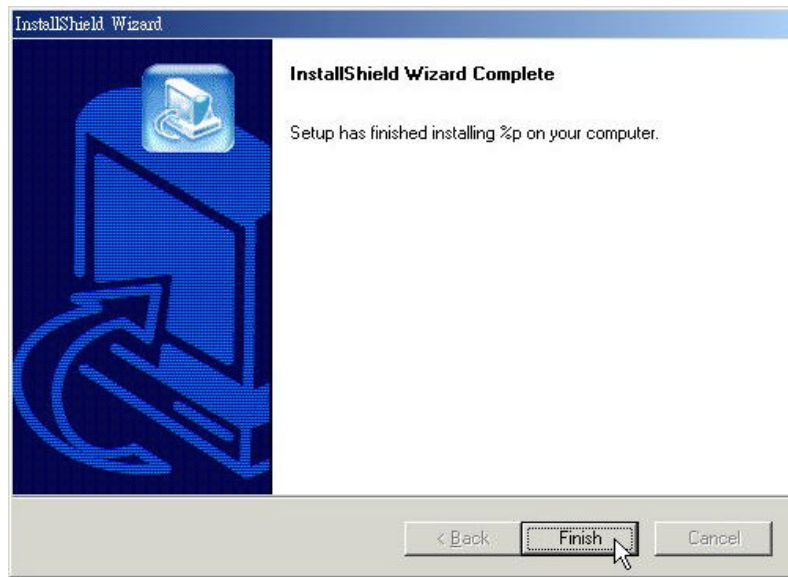
1. Establish a connection between host PC and PDA device by *Microsoft Active Sync*.
2. Execute **SMC2642W.exe** to install the driver and utility.



3. An *Install Shield Wizard* window appears. Click **Next** to proceed.



4. Follow on-screen instructions to install the Setup Utility. Click **Finish** to complete the installation.



## 2-2 Install the SMC2642W Wireless Compact Flash Card

1. Connect the SMC2642W 11Mbps Wireless Compact Flash Card to your PDA. The PDA will auto-detect the Wireless LAN Compact Flash Card and automatically install the corresponding driver.
2. Assign an IP address to your Wireless LAN Compact Flash Card. You may either set the Wireless LAN Compact Flash Card to obtain an IP address from your DHCP server, or to be assigned with a fixed IP address.



3. Reset your PDA.

Upon completion of installation, the Wireless LAN Compact Flash Card will start to look for an Access Point with Green LED blinking. The Green LED will stay steady once the Wireless LAN Compact Flash Card successfully associates with an Access Point. To configure the Wireless LAN Compact Flash Card, please proceed to the next chapter “*Using SMC2642W Wireless Compact Flash Card*”.

## Chapter 3 Using SMC2642W Wireless Compact Flash Card

This chapter gives you assistance with detailed description of setting the 11Mbps Wireless LAN Compact Flash Card with the Wireless LAN Utility under Pocket/Handheld PC.

### 3-1 Using the Wireless LAN Utility Under Pocket PC

The SMC2642W 11Mbps Wireless Compact Flash Card is a ready-to-use device. Its default settings perform for a typical **Infrastructure Wireless LAN**. Simply install the Wireless LAN Compact Flash Card onto your computer and it is ready to use. In special situations, however, you may adjust configuration settings depending on how you would like to manage your wireless network. The Wireless LAN Utility provides you an easy interface to make configuration changes and perform user-level diagnostics on your Wireless LAN Compact Flash Card.

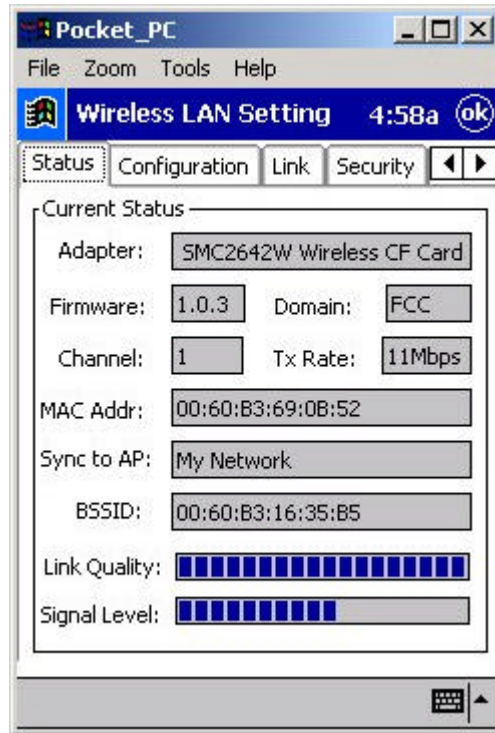
1. Go to **Start --> Settings**. Go to the **System** tab, and click the “**Wireless LAN Setting**” icon.



2. A configuration window appears. The Wireless LAN Utility provides the 5 following items for you to configure and monitor the 11Mbps Wireless LAN Compact Flash Card.

## Status

3. The **Status** tab displays the current status of the Wireless LAN Compact Flash Card.



**Adapter** - Displays name of the Wireless LAN Compact Flash Card.

**Firmware** - Displays the firmware version of your Wireless LAN Compact Flash Card.

**Domain** - The regulated operating frequency per country.

**Channel** - Displays the current channel that the Wireless LAN Compact Flash Card is using.

**MAC Address** - It is a hardware identification number that distinguishes the unit from others.

**Sync to AP** - Displays the ESSID of the Access Point that the Wireless LAN Compact Flash Card associates with.

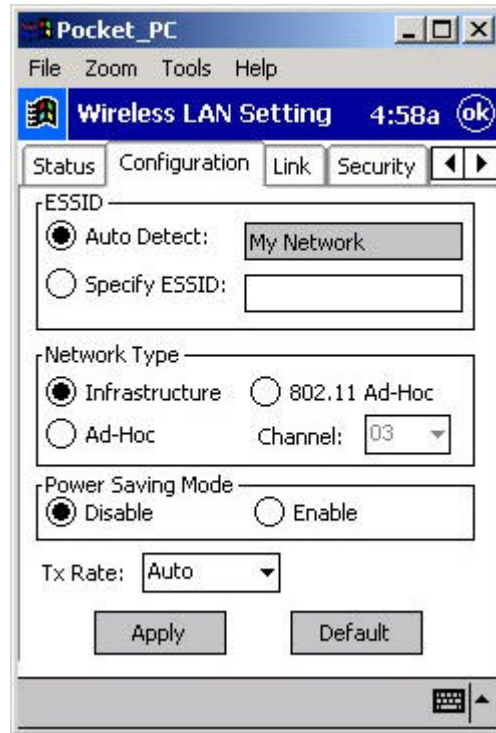
**BSSID** - Shows MAC Address of the Access Point that the Wireless LAN Compact Flash Card associates with.

**Link Quality** - Link quality monitors the quality of the data transmission between the Wireless LAN Compact Flash Card and an Access Point.

**Signal Level** - This bar graph displays signal strength as reported by the radio, averaged over all frames that are received from the Access Point.

## Configuration

The **Configuration** tab contains several fields where the current parameters of the Wireless LAN Compact Flash Card can be viewed and changed. You will see current configuration information in terms of ESSID, Network Type, Power Saving Mode and Tx Rate. Upon modification of parameters for the Wireless LAN Compact Flash Card, click the **Apply** button to make the changes take effect.



## ESSID

The ESSID is a unique ID given to the Access Point. Wireless clients associating to Access Points must have the same ESSID. The default value **Auto Detect** means when the Wireless LAN Compact Flash Card starts to work, it will associate with any Access Point that gives the fastest response. You may also enter a specific ESSID (Access Point) you desire to connect with. It is recommended you specify an ESSID for your Wireless LAN Compact Flash Card. This will prevent your computer from unintentionally connecting to a different wireless network.

## Network Type

To connect your wireless station to a local network infrastructure as described in Appendix A “ **Network Configuration**” on page 18, set the station operation mode to **Infrastructure** (with Access Point, default setting). In case you do not wish to connect to a network infrastructure, but prefer to setup a small wireless workgroup (without Access Point) also described on page 18, you can enable the **Ad-Hoc** (only compatible with the same series wireless PC Card) or **802.11 Ad-Hoc** tick box. When the **Ad-Hoc** mode is selected, be sure to set your wireless stations with the same channel. To use the **802.11 Ad-Hoc** mode, the same channel and ESSID among wireless stations are required.

## Power Saving Mode

The **Power Saving Mode** option is designed to conserve battery life of your computer. Selecting the “Enable” button activates the Power Save mode and your SMC2642W 11Mbps Wireless Compact Flash Card will go into sleep mode to minimize power consumption.

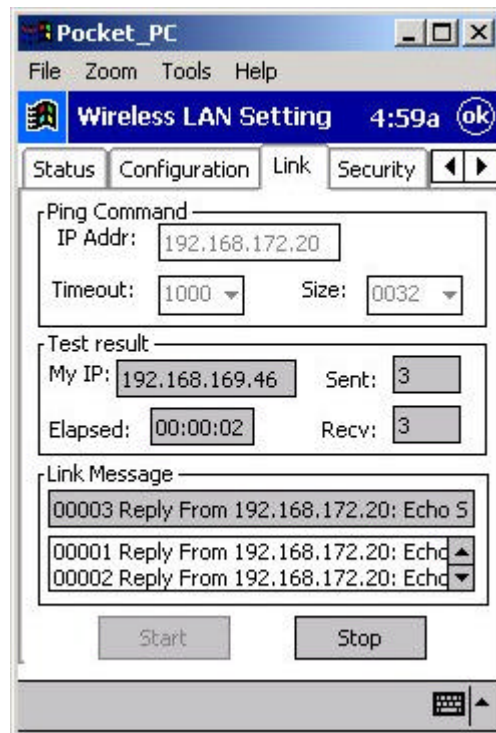
**NOTE:** When power saving mode is enabled, the Access Points you use need to support power saving as well so that the communication can be established.

## TX Rate

The 11Mbps Wireless Compact Flash Card provides various data rate options for you to select. Data rates options include **Fully Auto**, **Fixed 1Mb/s**, **Fixed 2Mb/s**, **Auto Select 1M or 2M**, **Fixed 5.5Mb/s**, and **Fixed 11Mb/s**. In most networking scenarios, you will see that the factory-set default “**Fully Auto**” will prove the most efficient. This setting will allow your 11Mbps Wireless LAN Compact Flash Card to operate at the maximum data rate. When the communications quality drops below a certain level, the Wireless LAN Compact Flash Card will automatically switch to a lower data rate. Transmission at lower data speed is usually more reliable. However, when the communications quality improves again, the Wireless LAN Compact Flash Card will gradually increase the data rate again, until it has reached the highest available transmit rate.

## Link

Similar to the TCP/IP Ping Command, this tool allows you to monitor point-to-point data transmission quality between two stations. By entering the IP address of another station and setting the timeout and packet size, you may check whether or not communication has been established successfully.





## Security

To prevent unauthorized wireless stations from accessing data transmitted over the network, the SMC2642W 11Mbps Wireless Compact Flash Card offers highly secure data encryption, known as WEP (Wired Equivalent Privacy). If you desire to use WEP encryption to secure your data, please select the **Enable** check box and set the following values.



There are two types of WEP Key Length described as follows:

**64-Bit** – Requires wireless stations to use data encryption with 64-Bit algorithm when communicating with the Access Point.

**128-Bit** – Requires wireless stations to use data encryption with 128-Bit algorithm when communicating with the Access Point

**WEP Key Type** offers two key value options: Character (**Char.**) and Hexadecimal numbers (**Hex.**). Moreover, you may choose the **Authentication Type**, either **Open System** or **Shared Key** for authentication among wireless devices. You may identify up to 4 different encryption keys and select one of them to encrypt your transmission data. The key value of your choice may either be:

*For 64-bit encryption:*

- 5 characters in the range of “A-Z”, “a-z” and “0-9” (e.g. MyKey, shown as above figure).
- 10 digit hexadecimal values in the range of “A-F”, “a-f” and “0-9” (e.g. 11AA22BB33).

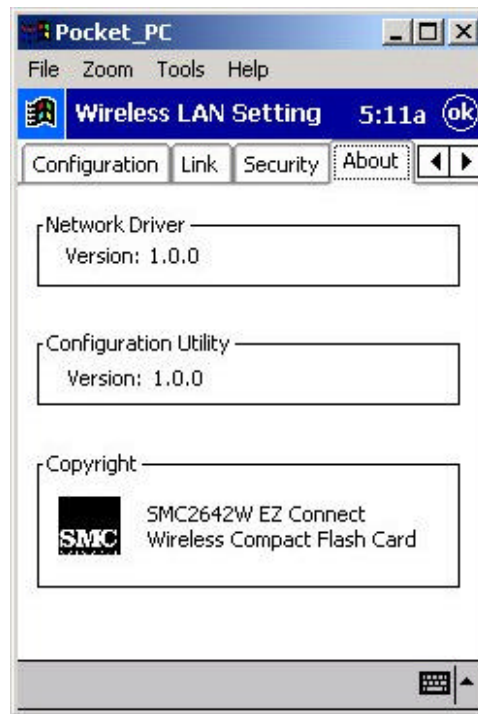
*For 128-bit encryption:*

- 13 characters in the range of “A-Z”, “a-z” and “0-9”, preceded by the characters values (e.g. MyKey12345678)
- 26 digit hexadecimal values in the range of “A-F”, “a-f” and “0-9”, preceded by the characters values (e.g. 12345678901234567890123456, shown as below)



## About

The “**About**” tab shows driver and utility version of the SMC2642W Wireless Compact Flash Card.



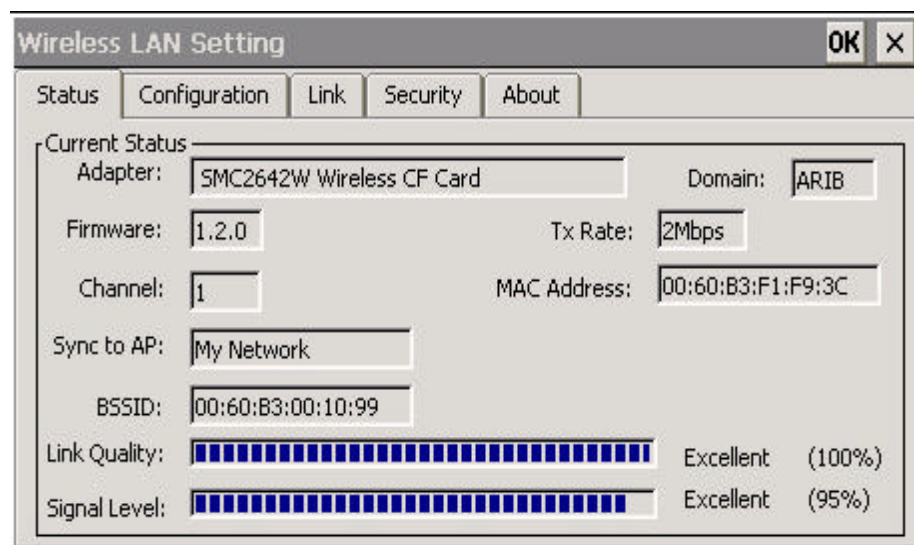
## 3-2 Using the Wireless LAN Utility Under Handheld PC

The usage of Wireless LAN Utility under Handheld PC is exactly the same with that under Pocket PC. The only difference is the window size. The following is brief description on the Wireless LAN Utility. For more details please refer to 3-1 *Using the Wireless LAN Utility Under Pocket PC*.

1. Go to **Start --> Settings**. Click the “**Wireless LAN Settings**” icon. A configuration window shows up. When you minimize the window by clicking the **OK** button on the upper right corner of the utility window, a system tray icon will be loaded on the toolbar. Clicking on the icon will open the configuration window again. The description of each item is as follows:

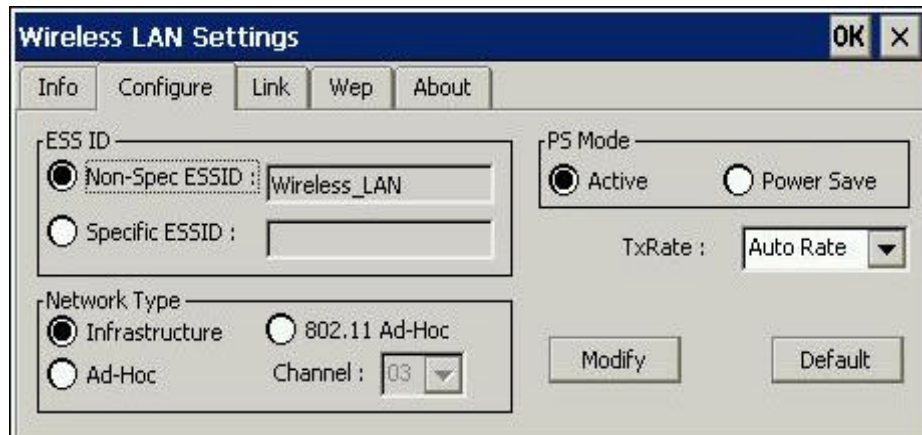
### *Status:*

This item shows the current information on the SMC2642W 11Mbps Wireless Compact Flash Card such as Adapter Name, Firmware, Domain, Channel, Tx Rate, MAC Address, Sync to AP, BSSID, Link Quality and Signal Level.



### ***Configuration:***

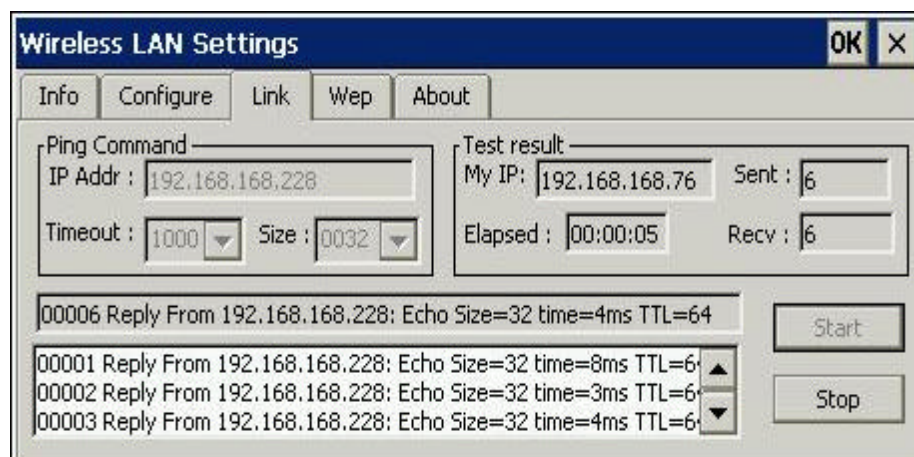
This item allows you to modify the configuration parameters for the SMC2642W 11Mbps Wireless Compact Flash Card such as ESSID, Network Type, Channel, Power Saving mode, and Tx Rate. After making changes on the configuration, click on the **Apply** button to make the changes take affect.



The image shows the 'Wireless LAN Settings' dialog box with the 'Configure' tab selected. The 'ESS ID' section has 'Non-Spec ESSID' selected with the value 'Wireless\_LAN'. The 'PS Mode' section has 'Active' selected. The 'TxRate' is set to 'Auto Rate'. The 'Network Type' section has 'Infrastructure' selected, and the 'Channel' is set to '03'. There are 'Modify' and 'Default' buttons at the bottom right.

### ***Link:***

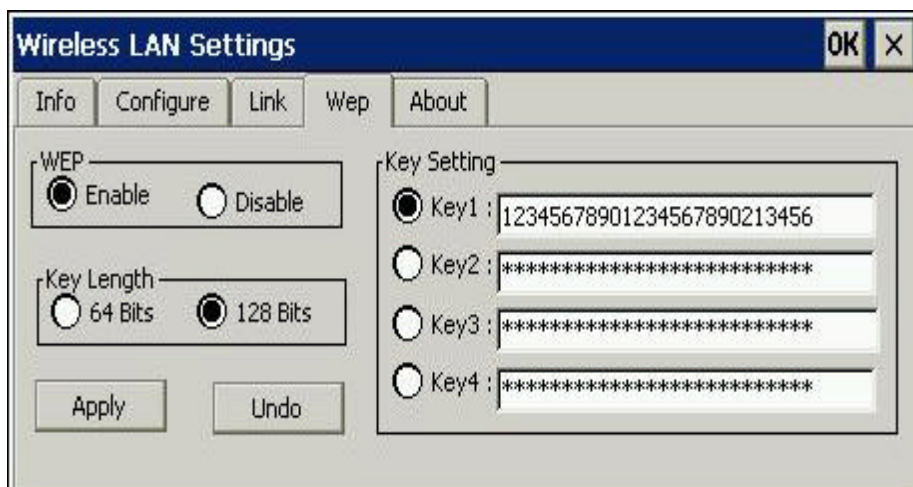
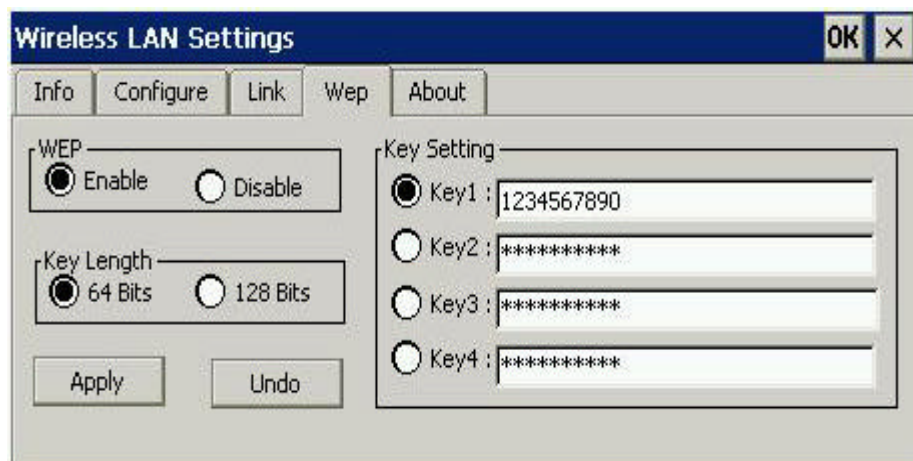
Similar to Ping Command, this tool allows you to monitor point-to-point data transmission quality between two nodes. By entering the IP address of another node and setting the timeout and packet size you may know whether or not the communication has been established successfully.



The image shows the 'Wireless LAN Settings' dialog box with the 'Link' tab selected. The 'Ping Command' section has 'IP Addr' set to '192.168.168.228', 'Timeout' set to '1000', and 'Size' set to '0032'. The 'Test result' section shows 'My IP' as '192.168.168.76', 'Sent' as '6', 'Elapsed' as '00:00:05', and 'Recv' as '6'. There is a list of ping results at the bottom, and 'Start' and 'Stop' buttons on the right.

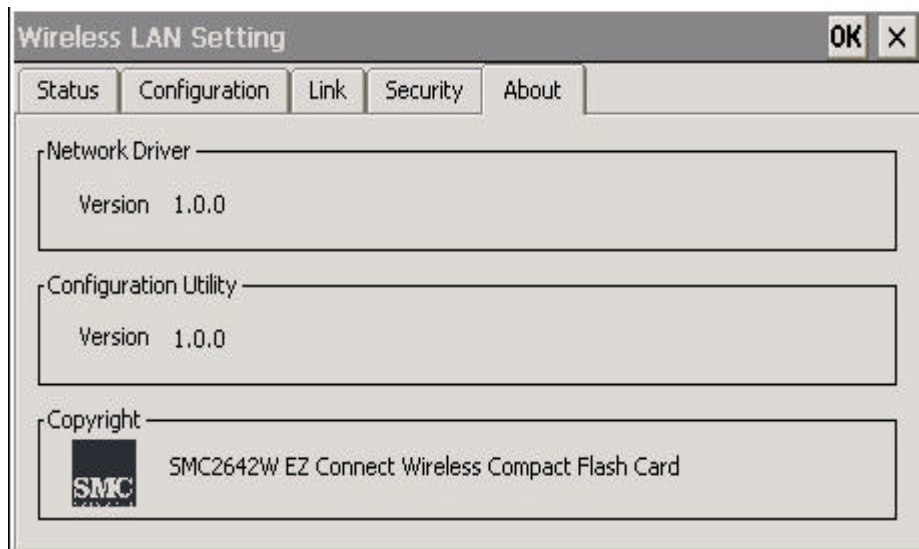
## Security

The encryption function enables you to encrypt and decrypt your wireless data, making your data more secure. To enable the WEP encryption, select the **“Enable”** check box, select the Key Length, either 64-bit or 128-bit, and enter the WEP Keys in the Key field. For 64-Bits encryption the key values are **5 characters** in the range of “A-Z”, “a-z” and “0-9” (e.g. MyKey); or **10 digit hexadecimal values** in the range of “A-F”, “a-f” and “0-9” (e.g. 11AA22BB33). For 128-Bits encryption the key values are **13 characters** in the range of “A-Z”, “a-z” and “0-9” (e.g. MyKey12345678); or **26 digit hexadecimal values** in the range of “A-F”, “a-f” and “0-9” (e.g. 11AA22BB33123456789ABCDEFF). After entering the WEP keys, choose a WEP Key to use and then click **Apply** to make the configuration take effect.



### ***About***

The **About** tab shows driver and utility version of the SMC2642W Wireless Compact Flash Card.



### **Caveat**

- Due to WinCE's nature of the first application at power-on resuming to that at power-off, if you are stuck at the utility program, you may use the PDA's reset button to terminate it. And then activate it again when needed.
- Sometimes, your wireless connection to AP may disconnect for any reason. You can reset and force a connection request by going to utility program, then select "**Configuration**", check parameters, then select "**Apply**" to force a re-scan.
- If your device roams to a new AP which is in a different subnet, you may need to remove and re-insert the Wireless LAN Compact Flash Card to force an execution of "release and renew" of an re-assignment of IP address in a DHCP Access Point environment.



## Chapter 4     Installing the SMC2642W Wireless CF Card Under Windows 98/ME/NT/2000/XP

This chapter describes the instructions that guide you through the proper installation of your SMC2642W 11Mbps Wireless Compact Flash Card for the Windows 98/ME/NT/2000/XP operating systems.

### **4-1 System Requirements**

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In order to use the SMC2642W 11Mbps Wireless CF Card, your computer must be equipped with the following:

1. A PCMCIA Type II slot, and a PCMCIA card and socket services compliant with revision 2.10 of the PCMCIA specification (or higher).
2. Windows 98/ME/NT/2000/XP (with a Windows installation CD-ROM, diskettes for use during installation)
3. Minimum 500 Kbytes free disk space for installing driver and utility program.

### **4-2 Setting Up SMC2642W Wireless CF Card for Windows 98/ME**

- 
1. If your PC has a compact flash type II slot, simply insert the SMC2642W Wireless Compact Flash Card into the CF slot. If not, use the SMCCF-CVT CF to PCMCIA Converter as stated in no. 2 below.
  2. Firmly insert the SMC2642W 11Mbps Wireless Compact Flash Card into the SMCCF-CVT CF to PCMCIA Converter, as shown below. Then insert the 11Mbps Wireless Compact Flash Card into the PCMCIA slot of your computer.



SMCCF-CVT CF to PCMCIA Converter     SMC2642W

**NOTE 1:** SMC2642W only supports 3.3v. Make sure your Laptop supports 3.3v.



**NOTE 2:** The PCMCIA slot allows “hot swap” of PCMCIA adapter. You may therefore insert or remove your SMC2642W 11Mbps Wireless CF Card from the slot whenever you like even when the power of your computer is on (except for Windows NT since Windows NT does not support plug and play). However, you are advised to always disable the SMC2642W Wireless CF Card prior to removing the card from the PC card slot. This will allow the Windows operating systems to log off from the network server.

3. Windows 98/ME will automatically detect the new hardware and prompt you to install the driver needed.



4. Select “Search for the best driver for your device” and click **Next**.



5. Select the location where the corresponding driver is placed, then click **Next**.



6. Windows will search for “**SMC2642W 11Mbps Wireless Compact Flash Card**”. Click **Next**.



7. Windows 98 will prompt you for the Windows 98 Second Edition CD-ROM. Enter the path corresponding to the appropriate drives and click **OK**.



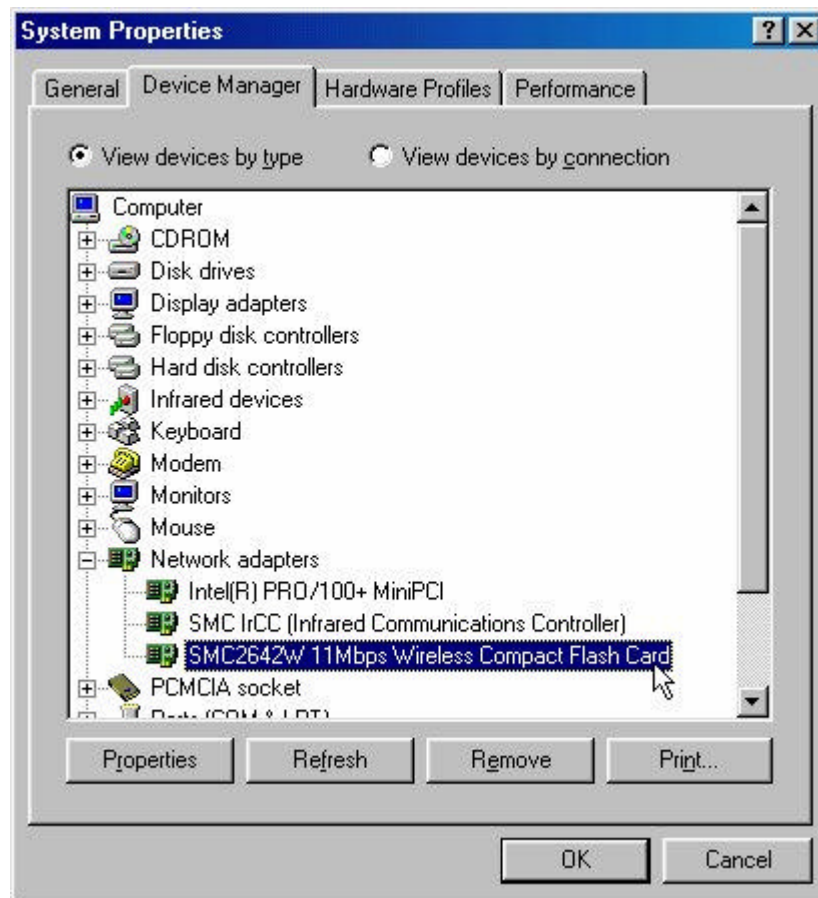
8. Click **Finish** to complete the software installation.



9. Restart the computer.



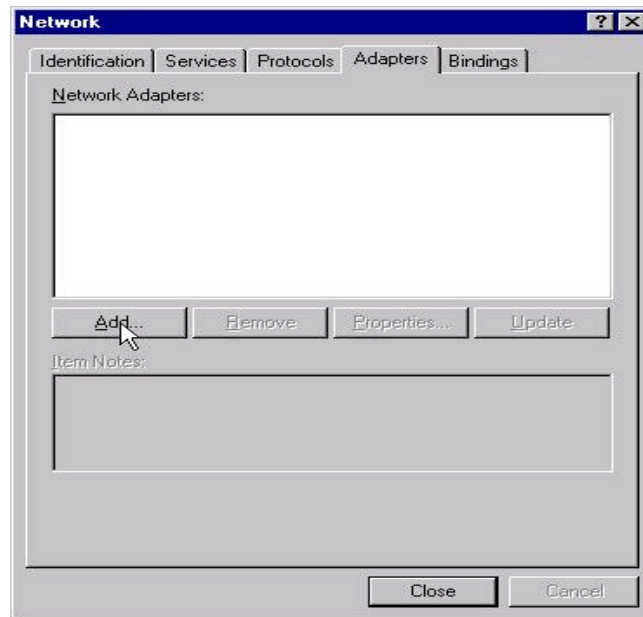
10. Open Control Panel/System/Device Manager, and check Network Adapters to see if any error icon appears. If there is no error icon, your SMC2642W is working well.



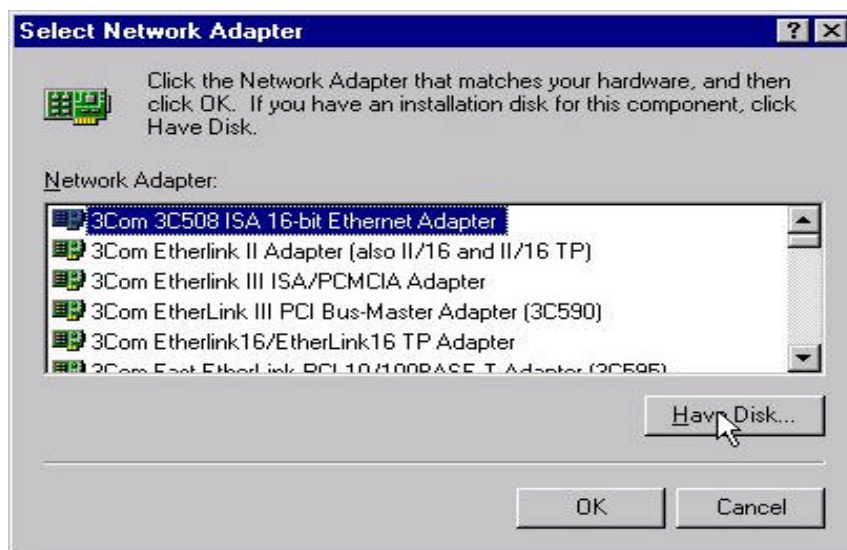
### 4-3 Setting Up the SMC2642W 11Mbps Wireless CF Card for Windows NT 4.0

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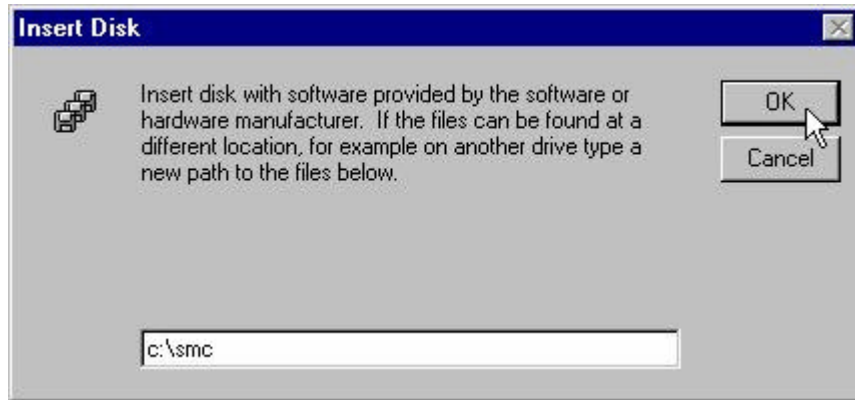
1. From the desktop, select **Control Panel**, double-click **Network**, go to the **Adapters** tab, and then click the **Add** button.



2. Windows NT will present a list of all of its supported adapters. Click **Have Disk** to continue.



3. Windows NT will prompt for the drive/path containing the SMC2642W 11Mbps Wireless CF Card Windows NT drivers. Insert the Driver/Utility CD-ROM into the corresponding drive, and then type the location where it is placed.



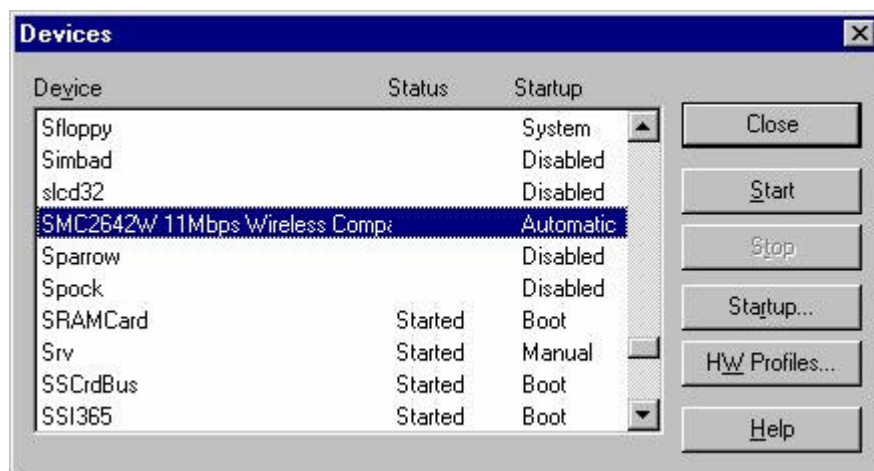
4. Windows NT will attempt to locate an INF file in the specified path. If you have entered the path name correctly, Windows NT should copy the appropriate drivers to the Windows NT system.



- Restart the system.



- To ensure whether the SMC2642W 11Mbps Wireless CF Card works fine or not, go to **Control Panel**, double-click on **Devices**, then verify whether the 11Mbps CF Card driver has started.





## **4-4 Setting Up the SMC2642W 11Mbps Wireless CF Card for Windows 2000**

1. If your PC has a compact flash slot type II, simply insert the Wireless Compact Flash Card into the CF slot. If there is no error icon, use the SMCCF-CVT CF to PCMCIA Converter as stated in No. 2 below.
2. Firmly insert the SMC2642W 11Mbps Wireless Compact Flash Card into the SMCCF-CVT CF to PCMCIA Converter. Then insert the 11Mbps Wireless Compact Flash Card into the PCMCIA slot.
3. Windows 2000 will automatically detect the new hardware and prompt you to install the driver needed.



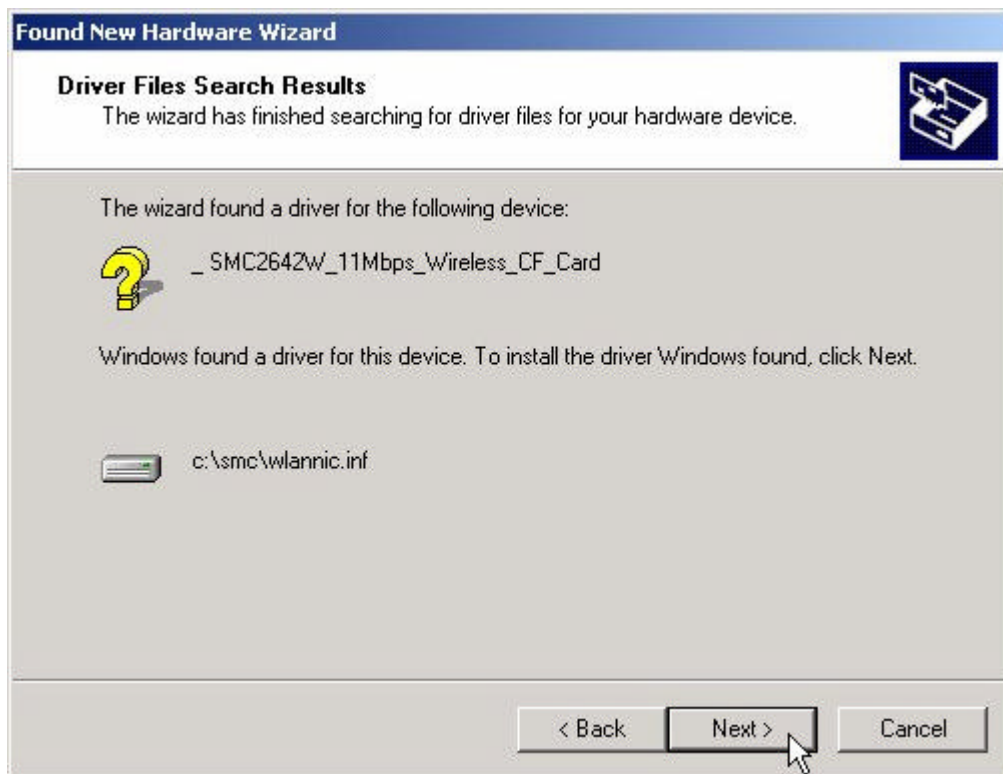
4. Select “**Search for a suitable driver for my device [recommended]**” and click **Next**.



5. Select the location where the corresponding driver is placed, then click **Next**.



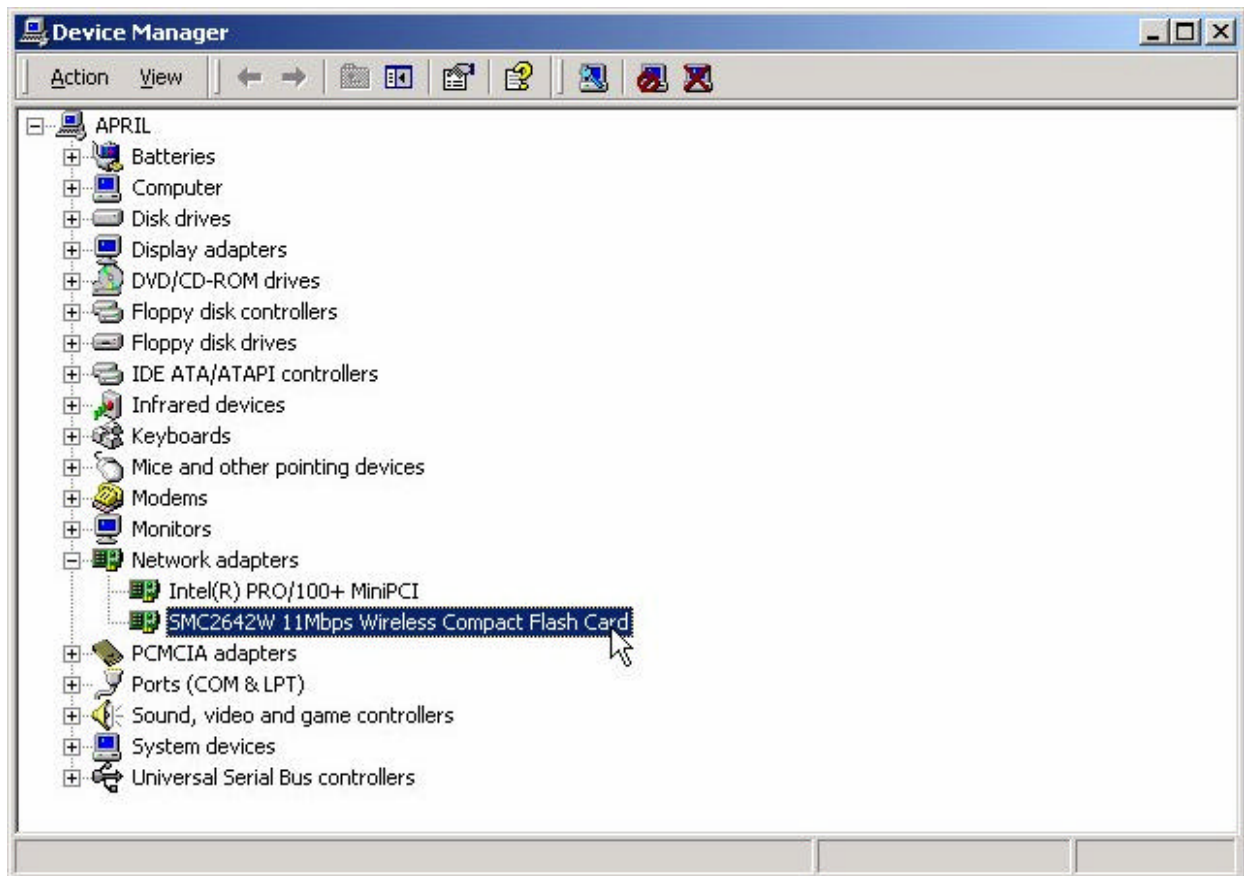
6. Windows 2000 will find “**SMC2642W 11Mbps Wireless CF Card**”. Now click **Next**.



7. Click **Finish** to complete the software installation.



8. Open **Control Panel/System/Device Manager**, and check **Network Adapters** to see if any error icon appears. If not, your SMC2642W 11Mbps Wireless CF Card is working well.



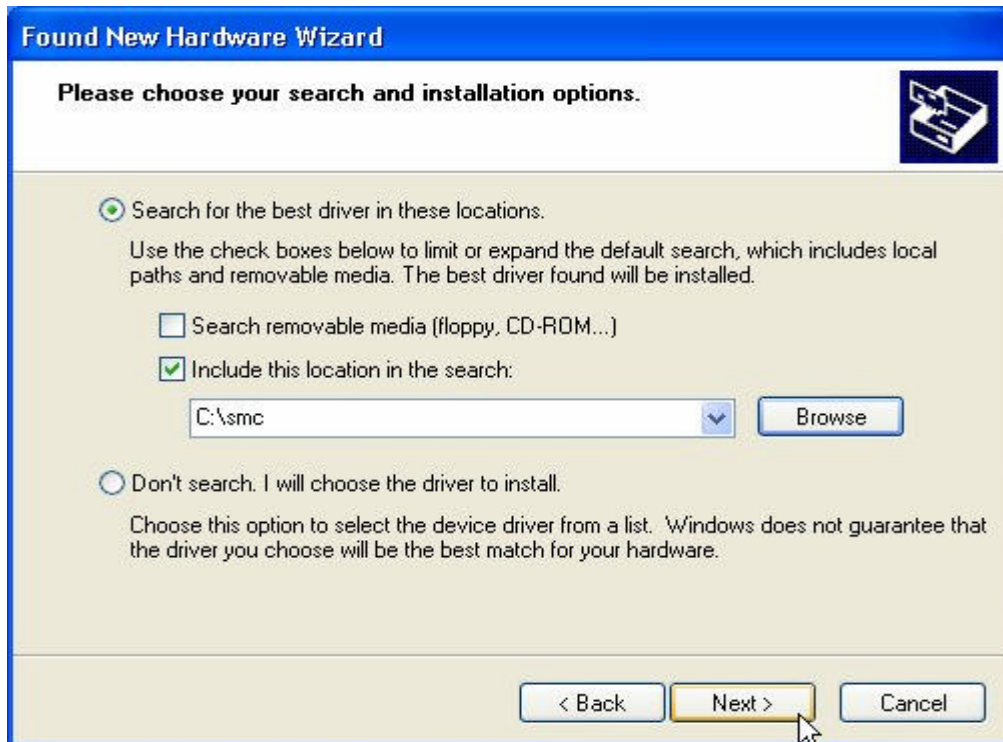
## 4-5 Setting Up the SMC2642W 11Mbps Wireless CF Card for Windows XP

1. If your PC has a compact flash slot type II, simply insert the Wireless Compact Flash Card into the CF slot. If not, use the SMCCF-CVT CF to PCMCIA Converter as stated in No. 2 below.
2. Firmly insert the SMC2642W 11Mbps Wireless Compact Flash Card into the SMCCF-CVT CF to PCMCIA Converter. Then insert the 11Mbps Wireless Compact Flash Card into the PCMCIA slot.
3. The Windows will auto-detect the Wireless CF Card and a “**Found New Hardware Wizard**” window will show up. Select “**Install from a list or specific (Advanced)**” to install the driver.

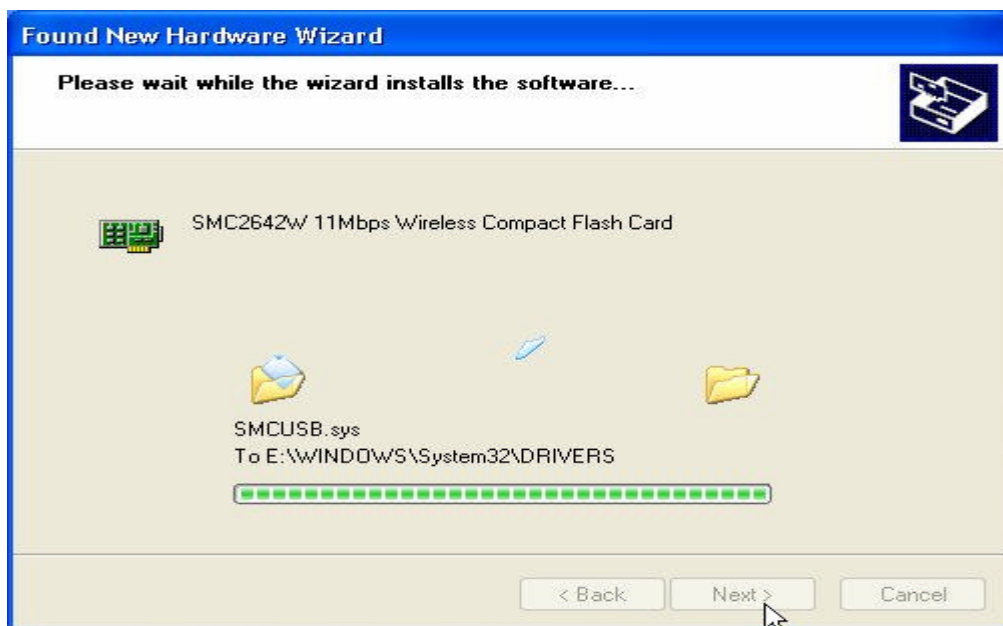




4. Insert the Driver/Utility CD-ROM into the appropriate drive. Specify the location where the driver is placed. Click on **Next** to install the driver.



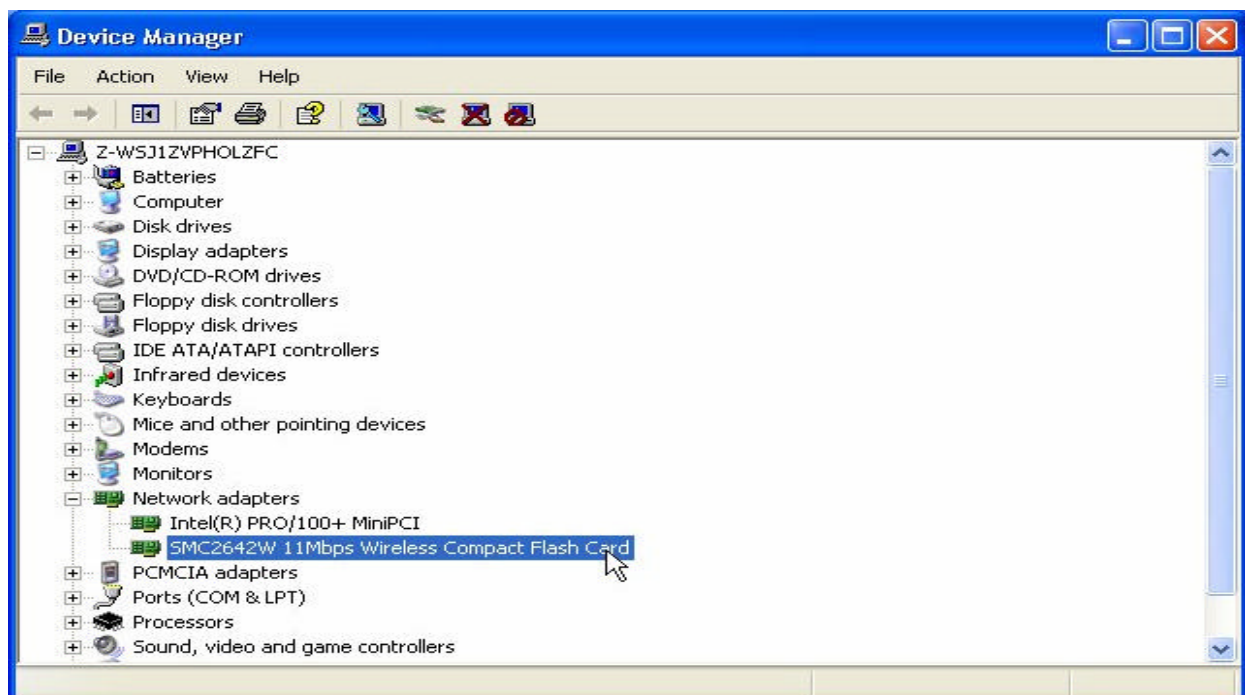
5. The windows will find “**SMC2642W Wireless CF Card**” and start copying corresponding files into the system. Click **Next** to continue.



6. Click **Finish** to complete the software installation.



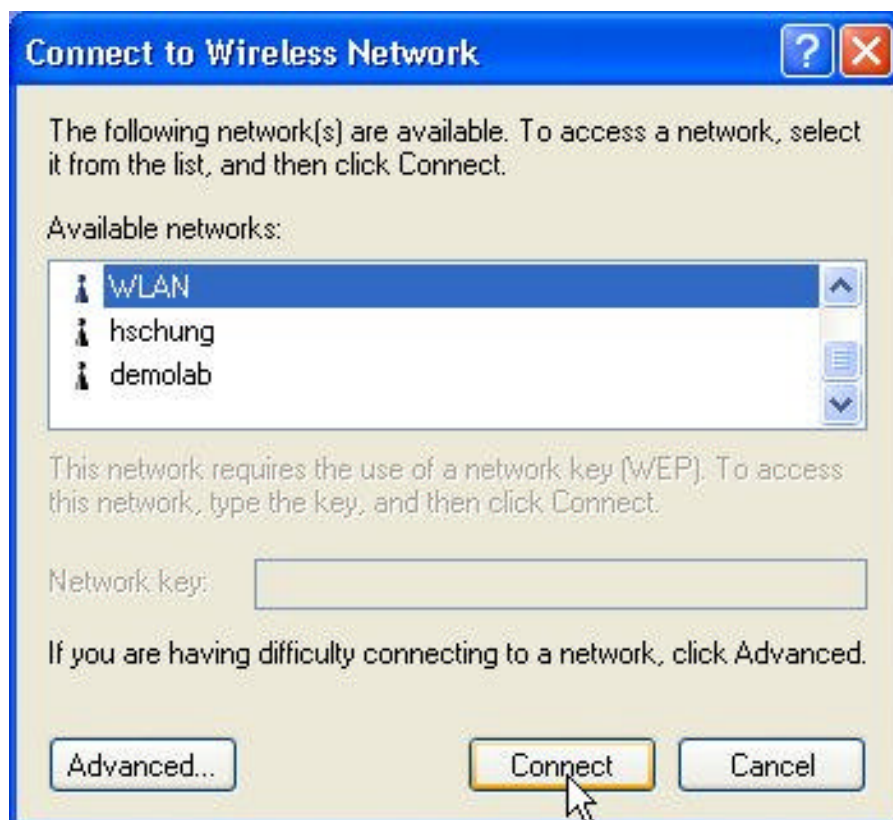
7. Right click "My Computer" from Start, select Properties, go to the Hardware tab and click the Device Manager button to see if any error icon appears next to the **Network Adapters/SMC2642W 11Mbps Wireless Compact Flash Card**. If there is no error icon, your 11Mbps Wireless CF Card is working well.



8. After installing the SMC2642W 11Mbps Wireless CF Card, Windows XP will display a “Wireless Network Connection # ” message.

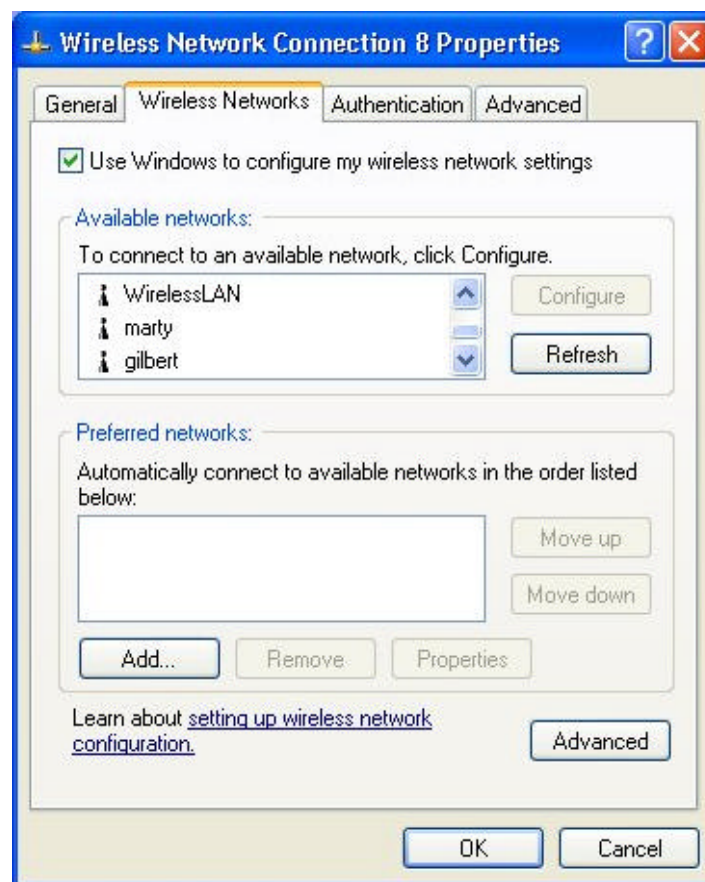


Click on the message and the “*Automatic Wireless Network Configuration*” will then appear and allows users to connect to a wireless infrastructure network (Access Point), shown as the below figure.





You may click the **Advanced** button to make advanced configuration for the SMC2642W, shown as below.



For more information on using the automatic wireless network configuration, please refer to Windows XP **Help** file.

The SMC2642W WLAN Utility, which comes with the Wireless CF Card, however, provides you with more tools to configure the CF Card and monitor the wireless connection. For more information on installing and using the WLAN utility, please refer to the following sections “*Installation of the Wireless LAN Utility*” and “*Usage of the WLAN Utility*”.



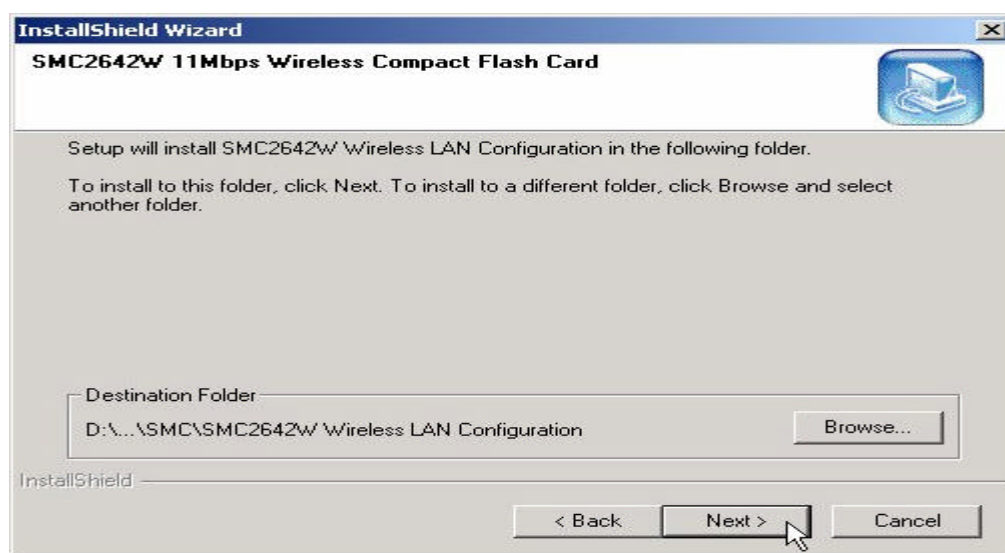
**Note:** To use the WLAN utility under Windows XP, you need to disable the Automatic Wireless Network Configuration first by clearing the “**Use Windows to configure my wireless network settings**” check box at Network Connections/Properties of Wireless Connection/Wireless Networks (see the above picture).

## Chapter 5 Using the SMC2642W Wireless CF Card Under Windows 98/ME/NT/2000/XP

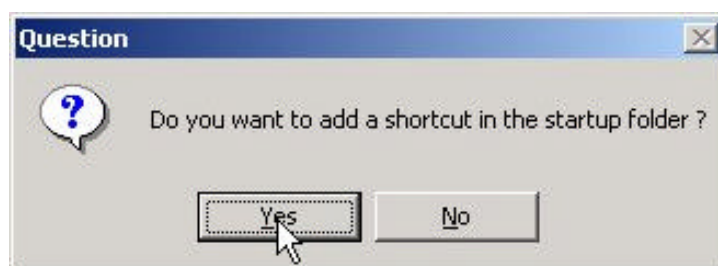
This chapter gives you detail installation procedures of the SMC2642W WLAN Configuration Utility for setting up the 11Mbps Wireless CF Card under Windows 98/ME/NT/2000/XP.

### 5-1 Installation of Wireless LAN Utility

1. Insert the Driver/Utility CD-ROM into the corresponding drive and execute the **utility\setup.exe**. Then follow the on-screen instructions which guide you through the process of installation.



2. You may add a shortcut in the startup folder as desired.



Upon completion, go to **Program Files** and run the WLAN Utility and its icon will appear in the **System Tray** in the bottom right corner of your taskbar. Clicking on the icon will open the configuration window. When you minimize the window, the system tray icon will be loaded in the **System Tray** again.

## 5-2 Using the SMC2642W WLAN Configuration Utility

The SMC2642W WLAN Configuration Utility enables you to make configuration changes and perform user-level diagnostics on your SMC2642W 11Mbps Wireless CF Card in the Windows XP/2000/NT/98/ME operating system environments. The WLAN Utility consists of 5 items for you to monitor and configure the 11Mbps Wireless CF Card: **Configuration**, **Loop Back**, **AP Browser**, **Site Survey** and **About**.

### *Configuration:*

The **Configuration** item allows you to modify the configuration parameters for the SMC2642W 11Mbps Wireless CF Card such as **Profile**, **Network Type**, **Ad-Hoc Channel**, **Transmit Rate**, **ESSID**, **WEP**, **RTS/CTS**, **Fragment Threshold**, and **Power Save** mode. Furthermore, you may monitor the current status of the Wireless CF Card such as **State**, **Current Channel**, **Current Tx Rate**, **Throughput**, **Link Quality** and **Signal Strength**.

The screenshot shows the 'Configuration' tab of the '802.11b Wireless LAN Configuration' utility. The window title is '[0020] SMC2642W 11Mbps Wireless Compact Flash Card'. The 'Adapter Select' dropdown is set to '[0020] SMC2642W/ 11Mbps Wireless Compact Flash Card'. The 'Profile' section has a dropdown menu and 'Save' and 'Delete' buttons. The 'Network Type' is set to 'Infrastructure', 'Ad-Hoc Channel' is '3', and 'Transmit Rate' is 'Fully Automatic'. The 'WEP Enabled' checkbox is unchecked, and the 'WEP Key' button is visible. The 'Advanced' tab is selected, showing 'SSID' as 'ANY' and 'BSSID' as '00:00:00:00:00:00'. The 'Status' section shows the state as 'Associated - WLAN - 00:60:B3:66:D5:49', 'Current Channel' as '10', 'Current Data Rate' as '11 Mbits/sec', 'Throughput' as 'TX: 0, RX: 1118', 'Link Quality' as 'Excellent (100%)', and 'Signal Strength' as 'Excellent (100%)'. A 'Rescan' button is present. At the bottom are 'OK', 'Cancel', and 'Help' buttons.

## Profile

The **Profile** field allows you to set values for all parameters by selecting a previously defined profile. Click on the drop-down list of the **Profile** field to display the available profiles for your Wireless CF Card. You will always have at least one profile, named **Default**. You can modify this profile at any time. Or, you can also create multiple profiles by typing a name in the **Profile** field. If one of the profiles is no longer used, you may remove it by clicking the **Delete** button. After changing parameters, click the **Save** button and **Apply** button to take effect.



## Network Type

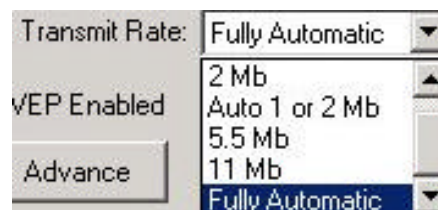
There are 3 network types for the 11Mbps Wireless CF Card to operate. If you need to access company network or Internet via Access Point, select “**Infrastructure**”. To set up a group of wireless stations for file and printer sharing, select “**AdHoc**” or “**802.11 AdHoc**” (without Access Point). If **Ad-Hoc (without access point)** is selected, you need to set wireless stations with the same channel. If **802.11 AdHoc** is selected, same channel and ESS ID are required for each wireless stations.



Check here before entering the ESS ID

## Transmit Rate

The SMC2642W 11Mbps Wireless CF Card provides various data rate options for you to select. Data rates options include **Fully Automatic**, **2 Mb**, **Auto 1 or 2 Mb**, **5.5 Mb**, and **11 Mb**. In most networking scenarios, you will see that the factory-set default “**Fully Automatic**” will prove to be the most efficient. This setting will allow your 11Mbps Wireless CF Card to operate at the maximum data rate. When the communications quality drops below a certain level, the CF Card will automatically switch to a lower data rate. Transmission at lower data speeds are usually more reliable. However, when the communications quality improves again, the SMC2642W 11Mbps Wireless CF Card will gradually increase the data rate again, until it reaches the highest available transmit rate.



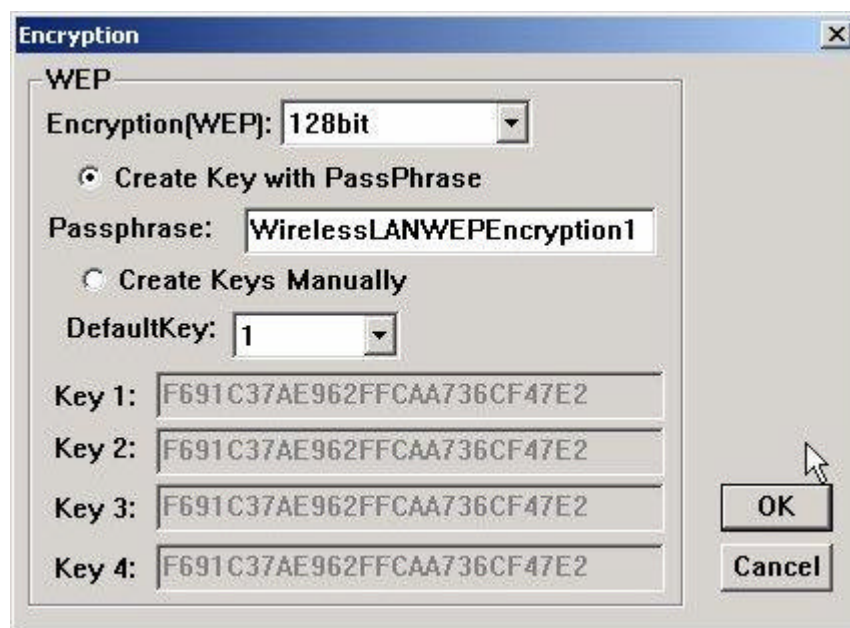
## WEP

To prevent unauthorized wireless stations from accessing data transmitted over the network, the WLAN Utility offers highly secure data encryption known as WEP, which makes your data transmission more secure. To activate the WEP Encryption, check the **WEP Enabled** check box. An Encryption window will then appear. The instructions are as follows:

- Pull down the **Encryption (WEP)** menu and select either **64bit** or **128bit** encryption method.
- Specify the encryption keys. There are two methods to set the WEP keys, as described below:

### Create Encryption Keys by Using a Passphrase

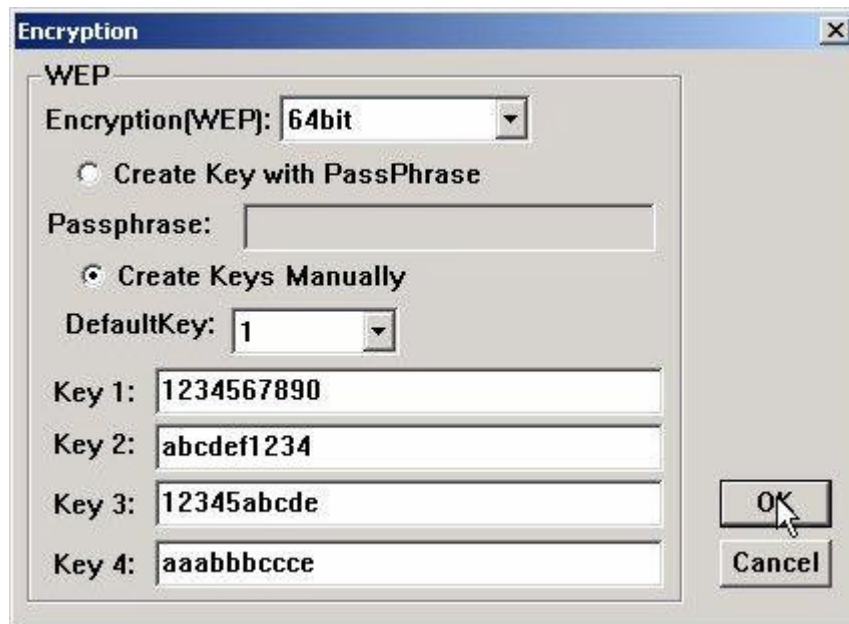
Users can just input the Passphrase. Then users need to define the Default Key and press OK and the 4 keys will be generated for 64-Bit WEP. For 128-Bit WEP, there will only be 1 key generated after entering the Passphrase.



Create Encryption Keys Using a Passphrase (128bit)

### Create Encryption Keys Manually

You can also create encryption keys manually by clicking the **Create Keys Manually** check box. For 64bit encryption, you must enter exactly *10 hexadecimal digits* in the range of “A-F”, “a-f” and “0-9” (e.g. 11AA22BB33) in each of the four key fields; for 128bit encryption, you need to enter exactly *26 hexadecimal digits* in the range of “A-F”, “a-f” and “0-9” (e.g. 00112233445566778899AABBCC). Then click the **Apply** button to create your encryption keys.



The screenshot shows a Windows-style dialog box titled "Encryption". Inside, under the "WEP" section, the "Encryption[WEP]" dropdown is set to "64bit". There are two radio buttons: "Create Key with PassPhrase" (unselected) and "Create Keys Manually" (selected). Below the radio buttons is a "Passphrase:" text field. Under the "Create Keys Manually" option, there is a "DefaultKey:" dropdown set to "1". Below this are four text fields labeled "Key 1:", "Key 2:", "Key 3:", and "Key 4:". The values entered are "1234567890", "abcdef1234", "12345abcde", and "aaabbbccce" respectively. At the bottom right are "OK" and "Cancel" buttons.

Create Encryption Keys Manually (64bit)



### ***Loop Back:***

The **Loop Back** tool helps you examine point-to-point data transmission quality between your 11Mbps Wireless CF Card and any workstation on the network. By entering the IP address of the remote station, set ping interval and packet size, you may know whether communication has been made successfully or not. Additionally, if you use the infrastructure wireless LAN configuration, you may run the loopback test by clicking the **Loop back** button to verify the communication quality between your wireless station and Access Point.

[0020] SMC2642W 11Mbps Wireless Compact Flash Card

802.11b Wireless LAN Configuration | **Loop Back** | AP Browser | Site Survey | About

**IP Layer**

Remote Address:  Packet Count:

Local Address:  Failure Count:

Ping Count:  Failure Percent:

Packet Size:

The IP address is invalid or unknown!

**MAC Layer**

Remote Address:  Packet Count:

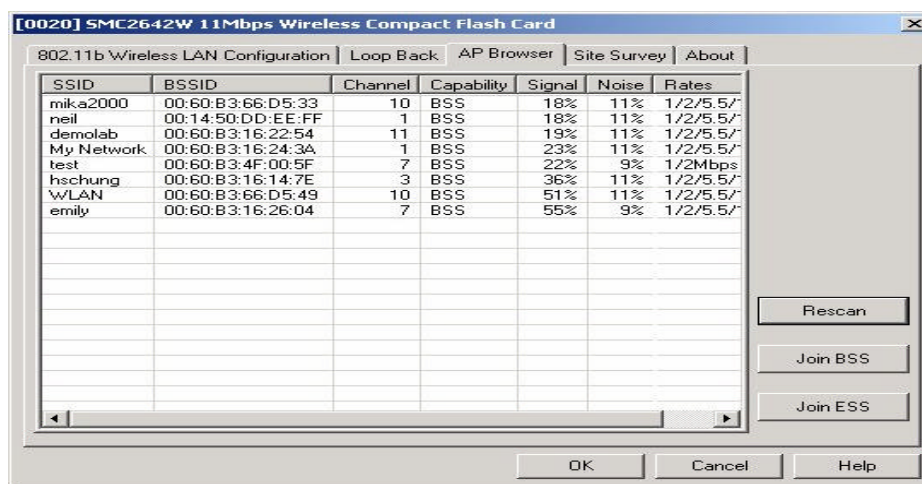
Test Interval:  Failure Count:

Packet Size:  Failure Percent:



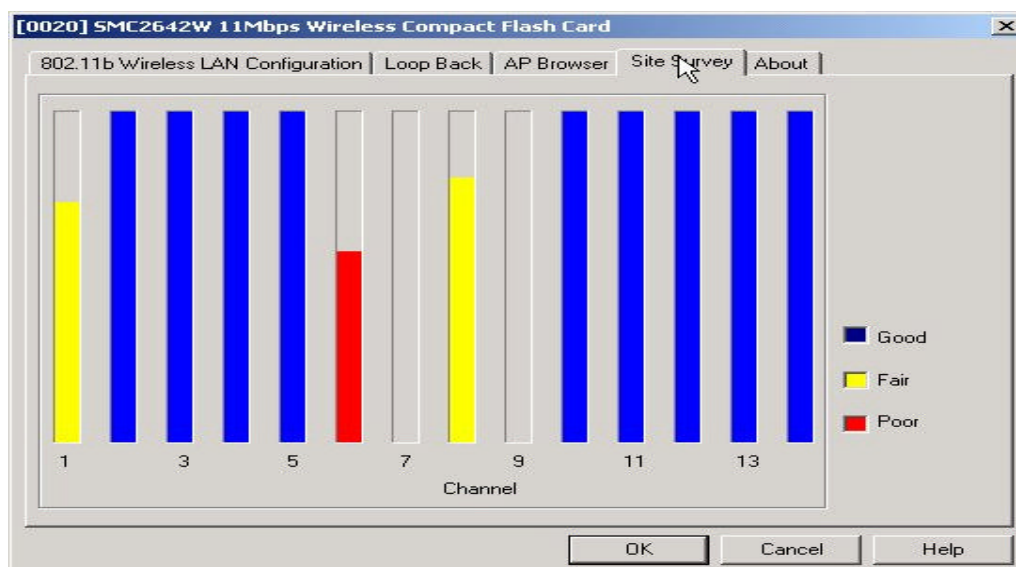
### AP Browser:

By clicking the **Rescan** button, the AP Browser can display all the Access Points around the working environment. Besides showing the ESSID of each Access Point, it also displays BSSID, Channel, Signal, Quality and Supported Rates. To join any of the displayed Access Point, highlight the Access Point you desire to connect and then click the **Join BSS** or **Join ESS** button to join the group.



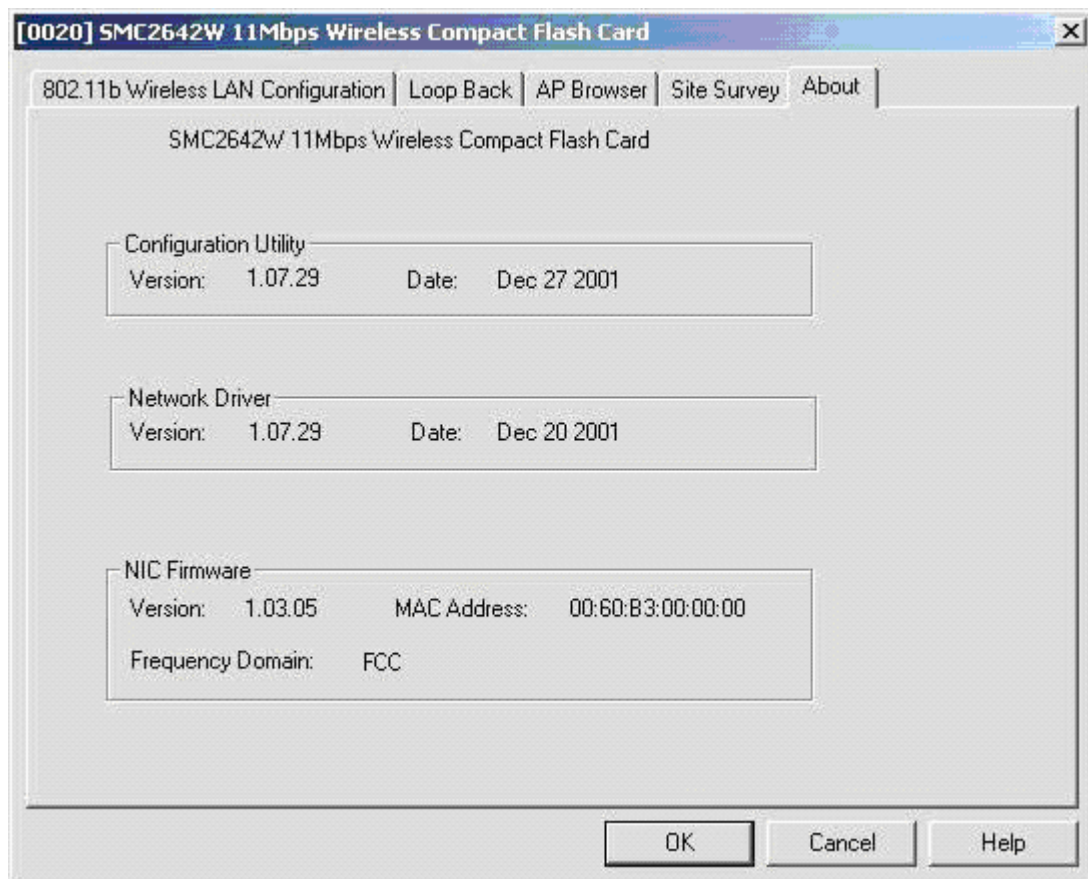
### Site Survey:

When the **Site Survey** screen is displayed, the channel quality of all 14 radio channels will be displayed. These channel quality measurements are shown on each gauge for the 14 radio channels. The blue bar indicated the channel quality is clear and good. The **higher** the blue bar is, the **better** quality you have (i.e., less interference). The yellow bar indicates the channel quality is fair and the red bar indicates the channel is busy or having severe interference.



**About:**

The **About** item shows the versions of the Wireless LAN Utility, driver, firmware of the SMC2642W 11Mbps Wireless CF Card. The MAC address and frequency domain are also displayed.



## Appendix A. Network Configuration

The 11Mbps Wireless LAN products support the same network configuration options of the legacy Ethernet LANs as defined by IEEE 802 standard committee.

The 11Mbps Wireless LAN products can be configured as:

- ◆ Ad-Hoc for departmental or SOHO LANs
- ◆ Infrastructure for enterprise LANs
- ◆ LAN-Interconnection for point-to-point link as a campus backbone.

### A-1 Network Topology

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#### ◆ Ad-Hoc

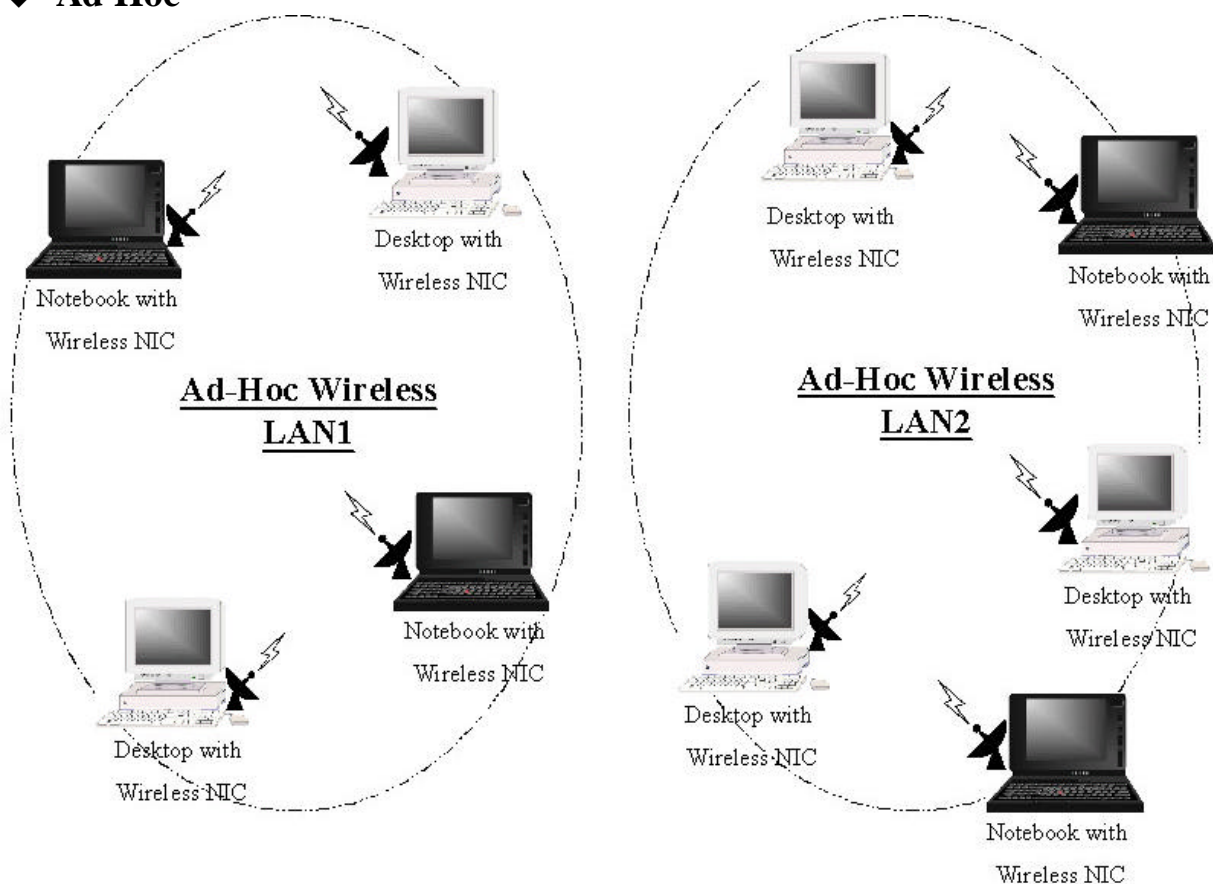


Fig An Example of Ad-Hoc Wireless LAN

An Ad-Hoc wireless LAN is a group of computers, each equipped with one wireless adapter, connected as an independent wireless LAN. Computers in a specific Ad-Hoc wireless LAN must be configured at the same radio channel.

Ad-Hoc wireless LAN is applicable at a departmental scale for a branch or SOHO operation.

## ◆ Infrastructure

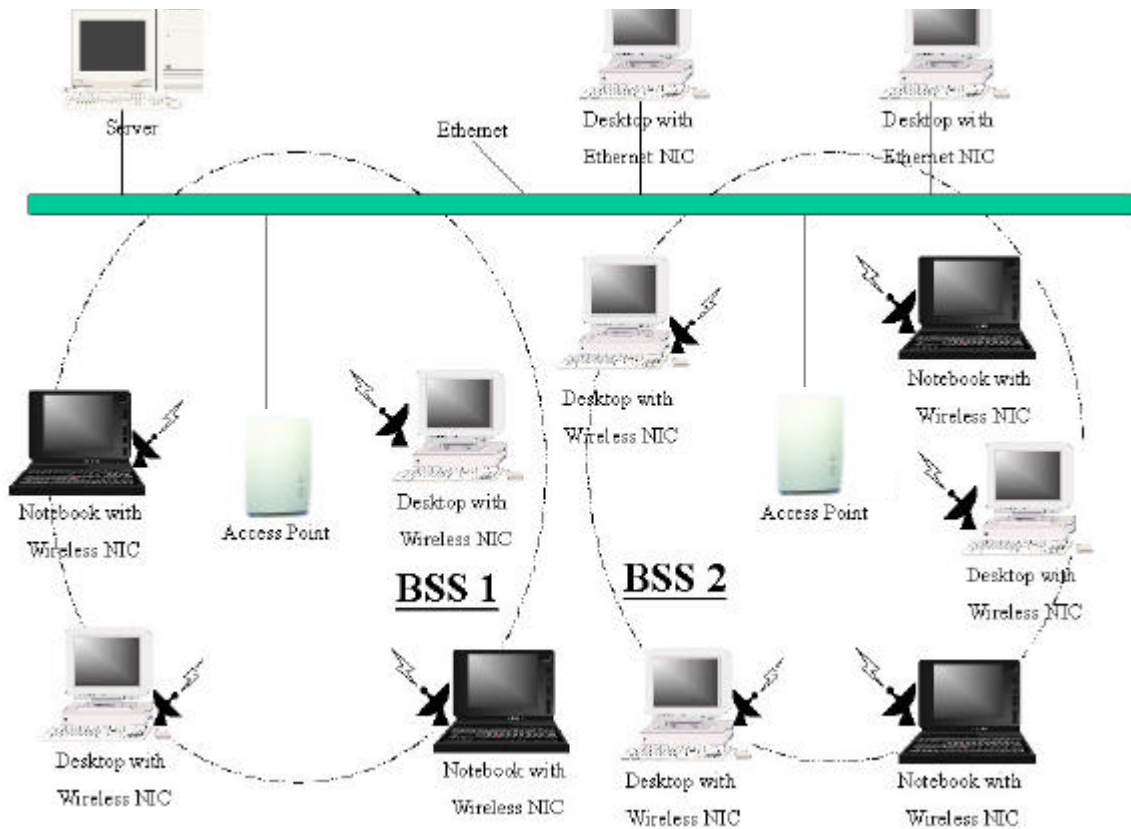
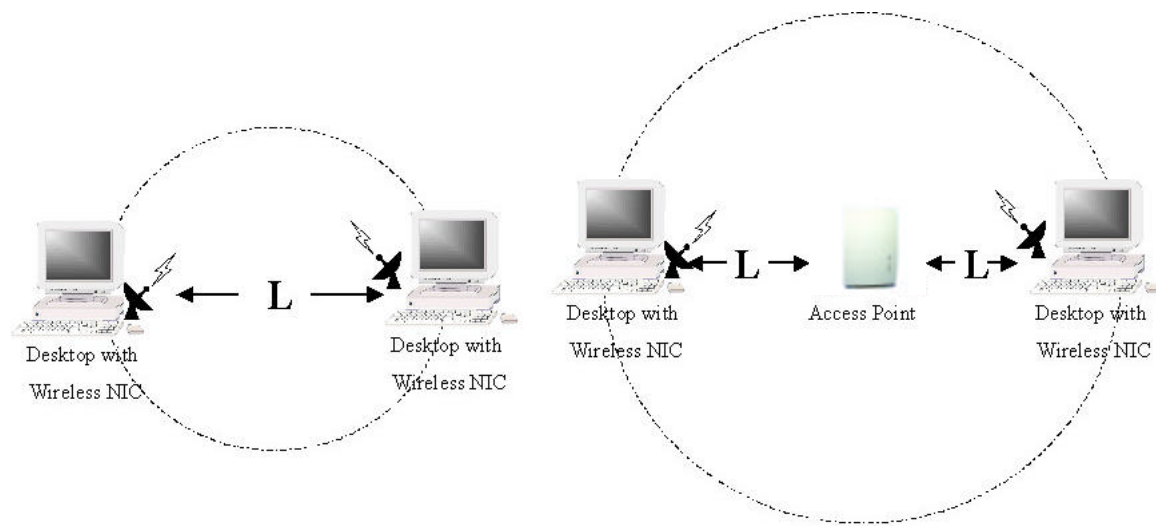


Fig An Example of Infrastructure Wireless LAN

The 11Mbps Wireless LAN devices provide access to a wired LAN for wireless workstations. An integrated wireless and wired LAN is called an Infrastructure configuration. A group of wireless LAN PC users and an Access Point construct a Basic Service Set (BSS). Each wireless-equipped PC in this BSS can talk to any computer in the wired LAN infrastructure via the Access Point.

Infrastructure configuration will extend the accessibility of a wireless station to the wired LAN. Multiple Access Points will allow roaming and it will increase the transmission range. The Access Point is also able to forward data within its BSS. The effective transmission range in an infrastructure LAN is **doubled**.



Ad-Hoc

Infrastructure

Fig The effective Transmission Range

## Appendix B. Specifications

<b>Product</b>	<b>SMC2642W Wireless Compact Flash Card</b>
Operating Channels	11 for N. America, 14 Japan, 13 Europe (ETSI), 2 Spain, 4 France
Operating Frequency	2.412-2.462 GHz ( N. America) 2.412-2.484 GHz (Japan) 2.412-2.472 GHz (Europe ETSI) 2.457-2.462 GHz (Spain) 2.457-2.472 GHz (France)
Range	Fixed at 11Mbps: 495 ft 5.5Mbps: 595 ft 2Mbps: 630 ft 1Mbps: 700 ft
Antenna	One Built-In antenna
Modulation	CCK(11Mps,5.5Mbps),DQPSK(2Mbps), DBPSK(1Mbps)
Voltage	3.3 VDC $\pm$ 0.3V
Host Interface	Compact Flash V1.4 , CF+ I/O interface, type II
Power Consumption	TX power consumption: <350mA RX power consumption <250mA Sleep Mode power consumption: 100mA
Output Power	14 dBm
Sensitivity	@PER < 0.08 11Mbps < -83 dBm 5.5Mbps < -86dBm 2Mbps < -89dBm 1Mbps < -91dBm
Data Rate	1,2,5.5,11 Mbps
Support OS	CE 3.0 and later, Windows 98/Me/NT/2000/XP

<b>Product</b>	<b>SMCCF-CVT CF to PCMCIA Converter</b>
Main Function	Converts Type I/II Compact Flash Card to standard Type II PCMCIA Card.
Voltage	Automatic Voltage detection supports both 3.3V and 5.0V Compact Flash Cards.
Host Interface	Fully compatible with Type I/II Compact Flash Cards specification standards
Power Consumption	DC 3.3V or DC 5V from PCMCIA socket directly
Supports	Supports PCMCIA PC Card ATA/IDE mode

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From Europe (8:00 AM – 5:30 PM UK Greenwich Mean Time)  
44 (0) 118 9748700; (Fax) 44 (0) 118 9748701

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**european.techsupport@smc-europe.com**

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[http://www.smc.com/Index.cfm?action=tech\\_support\\_drivers\\_downloads](http://www.smc.com/Index.cfm?action=tech_support_drivers_downloads)

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Benelux:	31334557288;	Fax 31334557330
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Eastern Europe:	34934774920;	Fax 34934773774
Sub Saharan Africa:	27113141133;	Fax 27113149133
North Africa:	34934774920;	Fax 34934773774
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Taiwan:	886-2-2659-9669;	Fax 886-2-2659-9666
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Korea:	82-2-553-0860;	Fax 82-2-553-7202
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